

CERTIFICATION APPLICATION FOR ENGINE FAMILY:

JMNCX2.52DM1

[FOI version]

VEHICLE CATEGORY:

ATV-B for 49-State; SCAR for California

MODEL YEAR:

2018

[Illustration removed for FOI version]

APPLICANT:

**Mahindra North American Technical Center, Inc.
1055 W. Square Lake Road
Troy, MI 48098-2523 USA
(248) 268-6600**

EPA MANUFACTURER CODE:

MNC

CARB MANUFACTURER CODE:

MNA

ASSISTED BY:

Ramboll Environ U.S. Corporation
773 San Marin Drive
Novato, CA 94998 USA

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1.

Common Information

COMMON INFORMATION

| Description | Specification |
|--|---|
| US Manufacturer/ US Importer | Mahindra North American Technical Center, Inc. |
| EPA Manufacturer Code | MNC |
| CARB Manufacturer Code | MNA |
| Parent Company Name | Mahindra Automotive North America, Inc. |
| Engine Model Year | 2018 |
| Vehicle Category | ATV-B for 49-State; SCAR for California |
| Application Type | New |
| Engine Family | JMNXC2.52DM1 |
| Permeation Family | JMNCPMETALA0 |
| Evaporative Family | N/A |
| Average Banking and Trading | N/A |
| EPA and/or CARB emission averaging program | N/A |
| Sales Areas | 50 States |
| Sale Volume | Regular |
| Original Equipment Manufacturer (OEM) | Mahindra North American Technical Center, Inc. |
| Vehicle Assembling Country | USA |
| Full Legal Name of the Engine OEM | Mahindra & Mahindra Ltd. |
| Contact Information: | |
| Name | Henrique R. Martins |
| Title | Sr. Manager - Technical & Regulatory Affairs, MNATC |
| Address | 1055 W. Square Lake Rd. Troy, MI 48098 USA |
| Phone | (248) 268-6600 |
| Email | martins.henrique@mahindra.com |

2.
Application for Certification
Letter/ Off-Road Use-Only
Statement



Mahindra North American Technical Center, Inc.
1055 W Square Lake Road
Troy, MI 48098

February 20, 2018

Mr. John LaCroix
Office of Transportation and Air Quality
US Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, MI 48105

Ms. Annette Hebert, Chief
Mobile Source Operations Division
Air Resources Board
9480 Telstar Avenue, Suite 4
El Monte, CA 91734

RE: New Application for Certification for Engine Family JMNCX2.52DM1

Mahindra North American Technical Center, Inc. (MNATC) would like to submit this application for certification for a model year (MY) 2018 ATV-B for 49-State; SCAR for California, engine family **JMNCX2.52DM1**.

The following parties are related to this application for certification as authorized representatives on behalf of the EPA certification applicant and the original equipment manufacturer:

| Certification Authorized Representative | Original Equipment Manufacturer (OEM) Representatives | |
|---|--|---|
| Lit Chan Principal Ramboll Environ U.S. Corporation 773 San Marin Drive, Suite 2115 Novato, CA 94998, USA. Phone: (415) 899-0751 Email: lchan@ramboll.com | Henrique R. Martins Manager, Technical and Regulatory Affairs Mahindra North American Technical Center, Inc. 1055 W Square Lake Road Troy, MI 48098 Phone: (248) 268-6600 Email: martins.henrique@mahindra.com | Troy Cornell Engineering Manager Mahindra North American Technical Center, Inc. 1055 W Square Lake Road Troy, MI 48098 Phone: (248) 268-6600 Email: cornell.troy@mahindra.com |

MNATC certifies that:

- **Emission Testing:** The vehicles are tested in accordance with the applicable test procedures of 40 CFR 1051 and 13 CCR (California Code of Regulations), using the fuels described in this application. The vehicles are tested using good engineering practice to ascertain that the vehicle meets the requirements for the useful life of the vehicle.
- **Label:** A Vehicle Emission Control Information (VECI) label will be designed and produced in accordance to 40 CFR 1051.135. The label will be affixed on prominent location, and cannot be removed without destroying the label and paint. A sample of the VECI label is included with this application. The label certified the vehicles have been designed for the expected off-road environment and will remain durable and legible during the useful life.
- **Hangtag:** A hangtag will be attached to every vehicle with the pertinent information as specified in 40 CFR 1051.137. The hangtag will be tied to the steering wheel. A sample of the hangtag is included with this application.
- **Warranty:** We will be providing the warranty to the retail purchasers of vehicles listed in this application in accordance with 40 CFR 1051.120. The warranty statement will be integrated into the owner's manual for the certified engine families. A copy of the warranty is included with this application for your review.

- **Statement of Conformity:** All vehicles described in this application comply with the requirements of 40 CFR 1051, other referenced subparts, and the Clean Air Act. The vehicles are built to the certifying specifications and are fully compliant with all applicable EPA regulations at the time of the final assembly. All vehicles manufactured under this engine family will meet emission standards established by the EPA for the full useful life. No further modifications are performed that might affect EPA certification compliance without applicable approvals. All production vehicles will comply with the requirements of the regulations and are identical in all material respects to the vehicle/engine tested and described in the application for certification.
- **Certification Fees:** We have paid the Motor Vehicle and Engine Compliance Program (MVECP) fee for this engine family and a copy of the payment form is attached for your reference.
- **Records:** All data records required by the subpart are on file and are available for inspection by the administrator. Copies of the emission tests results, durability logs, technical specifications, and the information requested by EPA and ARB for this engine family are enclosed with this application.

The manufacturer and commercial model names and vehicle photo for this engine family are as follows:


| Model Name | Photo |
|--|-------------------------|
| Manufacturer Model Name: M540 | [VEHICLE PHOTO REMOVED] |
| Commercial Advertised Model Name: ROXOR | |
| Manufacturer Model Name: M540 | [VEHICLE PHOTO REMOVED] |
| Commercial Advertised Model Name: ROXOR Dune Edition [cosmetic changes to reflect use on sand] | |

Should you have any questions regarding this application for certification or require any additional information, please feel free to contact Henrique Martins at (248) 268-6600 or martins.henrique@mahindra.com.

Sincerely,

Mahindra North American Technical Center, Inc.


Henrique Martins
Manager, Technical and Regulatory Affairs


Troy Cornell Engineering
Manager

3. Manufacturer Application Checklist

ATV/Off-highway Motorcycle Application Checklist (for 2006 and Later MY)

Box with * must be checked to confirm your compliance status

MY: 2018

| | | |
|---|-------------------------------------|---|
| US Manufacturer/Importer Name: MNATC, Inc. | Engine Family Name: JMNCX2.52DM1 | Is this the first ever certificate issued to this company? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes |
| Is this an ABT engine family? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, ABT plan has been included in: <input type="checkbox"/> Common Section <input type="checkbox"/> This application | | |
| Has Common Information been submitted? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes, a brief list of common information includes: | | |

* ☒ Test vehicle(s)/engine(s) passed all applicable exhaust emission standards and emission tests and vehicle mileage accumulation were conducted according to:

- ☒ Chassis test procedure specified in 40 CFR 86.426-78 to 86.430-78
- ☐ Engine test procedure specified in 40 CFR 1065
- ☐ EPA/CARB approved alternative or special testing method, approval reference:
- ☐ Carried over from engine family:
- ☐ EPA deterioration factor for small volume manufacturers

* ☒ Test vehicle(s)/engine(s) passed all applicable evaporative emission standards and emission tests were conducted according to:

- ☐ EPA permeation tests of fuel tank and fuel hoses (Ref: 40 CFR 1051.501 & 515)
- ☐ Evaporative testing as required by California regulations
- ☐ EPA/CARB approved method, approval reference:
- ☐ Carried over from evaporative family or group:
- ☒ Certify-by-design (Ref: 40 CFR 1051.501 & 515)

This application contains:

- * ☐ Phase-in plan (For 2006 MY only)
- * ☐ California Executive Order (Check for non-"California-only" certificate also)
- * ☒ Request for certification with (1) unconditional statement of compliance to all requirements specified in 40CFR§1051, 1065 and 1068; and (2) an authorized representative's signature.
 - * ☒ A statement that vehicles/engines covered by this application meet the appropriate emission standards; When emission averaging is involved, the corporate averaging Emission Levels are meet or less than appropriate standards, no Family Emission Limit (FEL) exceeds appropriate maximum cap limits, and corporate ABT report will be submitted to EPA at the end of model year.
 - * ☒ A statement that production vehicles/engines are identical in all material respects to the vehicle/engine tested and described in the application for certification.
 - * ☒ A statement that vehicles/engines covered by this application are built to the certifying specifications.
- * ☒ Evidence of paid fee and a copy of Application Fee Filing Form (Ref: www.epa.gov/otaq/fee.htm)
- * ☒ CSI (Certification Summary Information) - both .xml data set and printout summary pages from the data set
- * ☒ Description of service of process in the U.S. including, but is not limited to, legal arrangement for supplying emission parts, performing warranty service, and conducting emission recalls.
- * ☒ Required information specified in 40 CFR §1051.205 other than those submitted in CSI data set including, but is not limited to:
 - * ☒ A detailed description of catalytic converter(s) and any emission-related components
 - * ☒ A detailed description of any auxiliary emission control devices (AECD) and a statement of the vehicles/engines covered by this application are free of defeat devices or strategies.
 - * ☒ A List of emission related component numbers (after treatment emission control, fuel system, etc.).
 - * ☒ A copy of actual sized VECI label with a drawing or a photo showing actual label location (Ref: 40 CFR §1051.135(b)&(c)). A statement that VECI labels are fixed on vehicles/engines during manufacturing process.
 - * ☒ A copy of hang-tag for normalized emission rate (NER) (Ref: 40 CFR §1051.135(g))
 - * ☒ Text of warranty statement & maintenance instructions to user
 - * ☒ A list of emission test fuel specifications (Ref: 40 CFR §1051.205(f))
 - * ☐ (Engines only) Emission-related installation instructions (Ref: 40 CFR §1051.205(i) and 40 CFR §1051.130)
 - * ☒ A list of adjustable operating parameters and other adjustments (Ref: 40 CFR §1051.205(n))

I certify that to the best of my knowledge the above statements are true:

Applicant's Signature:  Date: 08/17/2017

EPA USE

Reviewed by:

Date:

4. ARB Classification Checklist for OHRVs

CLASSIFICATION OF CALIFORNIA OFF-HIGHWAY RECREATIONAL VEHICLES (OHRVs)

These tables summarize the determinants for All-Terrain Vehicle (**ATV**), Off-Road Utility Vehicle (**UV**), Off-Road Sport Vehicle (**SV**), Sand Car (**SCAR**), and Off-Road Motorcycle (**OFMC**) classification in the OHRV regulation⁽¹⁾, and new for the 2011 model year (MY2011) OHRVs meeting the large spark-ignition engine (LSIE) exhaust standards ("**light**" **UV** & "**heavy**" **SV**)⁽²⁾ classification. All applicable attributes & specifications within one vehicle class must be answered "yes" in order for a vehicle to meet the definition. If an off-road vehicle cannot be classified as an ATV, UV, "light" UV, SV, "heavy" SV, SCAR, or OFMC, then the vehicle's engine must be certified as an LSIE, Small Spark-Ignition Engine (SSIE), Off-Road Compression-Ignition Engine (OFCIE), or Spark-Ignition Marine Engine (SIME), as applicable. **These criteria are for guidance only; ARB will make the final determination on vehicle classification.** (Golf carts sold and operated in federal ozone non-attainment areas within California must emit zero emissions. Gasoline-powered golf carts ≤ 19 kW (> 19 kW) sold and operated in federal ozone attainment areas within California must meet the SSIE (LSIE) emissions requirements.)

Manufacturer: Mahindra North American Technical Center Model Year (MY): 2018
Division: _____ Engine Family: JMNXC2.52DM1
Model: ROXOR Permeation Family: JMNCPMETALAO

If all boxes in "YES" column are checked, this model is an **ATV** (MY2007 and later)

| Vehicle Attributes & Specifications | YES? |
|---|------|
| Overall width ≤ 50 inches (1270 mm) _____ (in) | |
| 4 or more _____ low pressure tires _____ (kPa) (kPa = psi \times 6.8947) | |
| Single seat straddled by operator _____, or Single seat straddled by operator and a seat for 1 passenger _____ (check one) | |
| Handlebar for steering | |
| Internal combustion engine | |

If all boxes in "YES" column are checked, this model is a **UV**

| Vehicle Attributes & Specifications | YES? |
|---|------|
| 4 or more <u> 4 </u> wheels | X |
| Bench _____ or bucket <u> X </u> seating (check one) for 2 or more <u> 2 </u> persons | |
| Steering wheel _____ (lbs. = kg \times 2.205) | X |
| Rear payload capacity ≥ 350 lbs. <u> 349 </u> (lbs.) or seating for 6 or more _____ passengers | |
| Designed for operation over rough terrain | X |
| Internal combustion engine ≤ 1.0 L _____ (L) (L = cu. in. \times 0.01639) | |
| Maximum power ≤ 30 kW _____ (kW) (kW = hp \times 0.7457) | |
| Can travel ≥ 25 mph. Maximum speed <u> 45 </u> (mph) (mph = km/hr \times 0.6214) | |

If all boxes in "YES" column are checked, this model is a "**light**" **UV**⁽²⁾ (MY2011 and later)

| Vehicle Attributes & Specifications | YES? |
|---|------|
| 4 or more <u> 4 </u> wheels | X |
| Bench _____ or bucket <u> X </u> seating (check one) for 2 or more <u> 2 </u> persons | X |
| Steering wheel | X |
| Rear payload capacity < 350 lbs. _____ (lbs.) or seating for 6 or more _____ passengers | |
| Designed for operation over rough terrain | X |
| Internal combustion engine ≤ 1.0 L _____ (L) (L = cu. in. \times 0.01639) | |
| Maximum power ≤ 30 kW _____ (kW) (kW = hp \times 0.7457) | |
| Can travel ≥ 25 mph. Maximum speed <u> 45 </u> (mph) (mph = km/hr \times 0.6214) | |

(Over)

CLASSIFICATION OF OHRVs (Continued)

If all boxes in "YES" column are checked, this model is a **SV**

| Vehicle Attributes & Specifications | YES? |
|---|------|
| 4 wheels | X |
| Bench_____or bucket__X__seating (check one) for 1 or more _2__persons | X |
| Steering wheel | X |
| Rear payload capacity ≤ 600 lbs. <u>349</u> (lbs.) | X |
| Designed for operation over rough terrain | X |
| Internal combustion engine ≤ 1.0 L <u>2.5</u> (L) | X |
| Can travel ≥ 25 mph. Maximum speed_____(mph) | |

If all boxes in "YES" column are checked, this model is a **"heavy" SV⁽²⁾** (MY2011 and later)

| Vehicle Attributes & Specifications | YES? |
|--|------|
| 4 wheels | X |
| Bench_____or bucket __X__seating (check one) for 1 or more _2__persons | X |
| Steering wheel | X |
| Rear payload capacity > 600 lbs. <u>349</u> (lbs.) | . |
| Designed for operation over rough terrain | X |
| Internal combustion engine ≤ 1.0 L <u>2.5</u> (L) | X |
| Can travel ≥ 25 mph. Maximum speed_____(mph) | |

If all boxes in "YES" column are checked, this model is a SAND CAR (**SCAR**)

| Vehicle Attributes & Specifications | YES? |
|--|------|
| 4 wheels | X |
| Bench_____or bucket __X__seating (check one) for 1 or more _2__persons | X |
| Steering wheel | X |
| Designed primarily for operation over sand dunes | X |
| Internal combustion engine > 1.0 L <u>2.5</u> (L) | X |

If all boxes in "YES" column are checked, this model is a **SV**, not a SCAR

| Vehicle Attributes & Specifications | YES? |
|--|------|
| 4 wheels | X |
| Bench_____or bucket __X__seating (check one) for 1 or more _2__persons | X |
| Steering wheel | X |
| Designed primarily for operation over sand dunes | X |
| Internal combustion engine ≤ 1.0 L _____(L) | |

If all boxes in "YES" column are checked, this model is an **OFMC**

| Vehicle Attributes & Specifications | YES? |
|--|------|
| 2_____or 3_____wheels | |
| Equipped with internal combustion engine | |
| Curb weight < 1,499 lbs. (lbs. = kg × 2.205) | |
| Primarily designed for use off highways | |

⁽¹⁾ OHRV definitions except "light" UV & "heavy" SV are in 13 CCR §2411 (a).

⁽²⁾ "Light" UV & "heavy" SV are certified per OHRV procedures in 13 CCR §§2410-2415 except they meet the exhaust standards in 13 CCR §2433 (b)(1)(A) (LSIE standards, 8.0 or 6.5 g/kW-hr HC+NO_x and 549 or 375 g/kW-hr CO @ 1,000 hours useful life.)

5.
Manufacturer
CROMERR
Authorization Letter



Mahindra North American Technical Center, Inc.
1055 W. Square Lake Road
Troy, Michigan 48098

Verify Team
c/o CGI Federal, Inc.
12601 Fair Lakes Circle
Fairfax, VA 22033

Dear Verify Team:

The purpose of this letter is to identify Mahindra North American Technical Center Inc.'s authorized users of the US EPA's Verify system. Mahindra North American Technical Center Inc.'s EPA manufacturer code is MNC.

I acknowledge that the individual(s) listed below and whose contact information is shown in the enclosure work(s) for Mahindra North American Technical Center, Inc. and is authorized to submit documents on Mahindra North American Technical Center Inc.'s behalf and perform the other functions as indicated. I further attest that we have validated that all users possess a valid current primary Government Picture ID, that the IDs have been inspected to compare picture to applicant, that we have recorded the ID number and issuer as well as the address and Date of Birth on the ID, and that we will keep a record of the above information for a minimum of five years after user employment termination or change in position.

If the business relationship (with respect to Verify) between any of these authorized users and this company changes (e.g. an employee leaves the company or we do not renew the contract for an agent representing us) I will notify EPA of the change in a letter similar to this one.

Regards,

A handwritten signature in blue ink, appearing to read "Frederick Laws", is written over a horizontal line.

Mr. Frederick Laws, Corporate Financial Officer

Mahindra North American Technical Center Inc.'s Authorized Verify Users
Name of User #1 Paul Kerns
Name of CROMERR Signer #1 Troy Cornell
Name of CROMERR Signer #2 Henrique Martins
Name of CROMERR Signer #3 Lit Chan

Enclosure: Verify User Registration Information Spread sheet

7. Engine Family Description

ENGINE FAMILY DESCRIPTION

ENGINE FAMILY: **JMNCX2.52DM1**

VEHICLE MODEL: **M540**

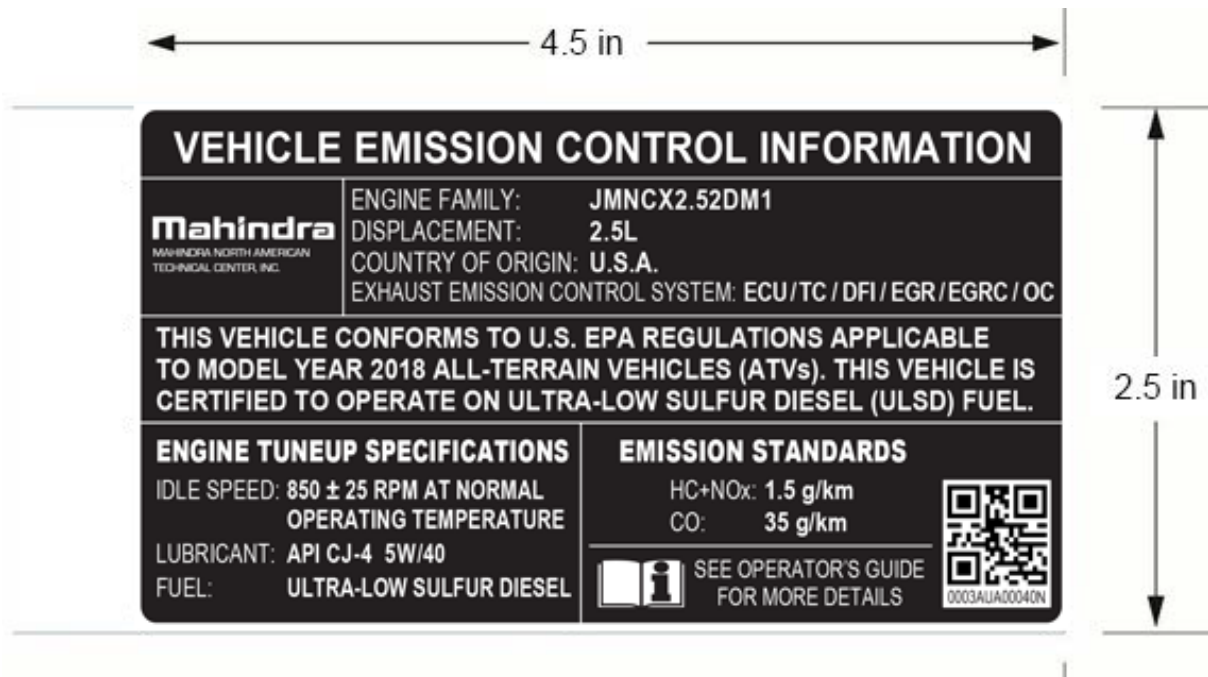
| Parameters | |
|--|---|
| Vehicle Category | ATV-B for 49-State; SCAR for California |
| OEM Model Names | M540 |
| Configuration ID | LCCR DI BSIV |
| Bore & Stroke (mm) | 88.9 x 101.6 |
| Basic Ignition Timing | Controlled by injection timing/variable |
| Displacement | 2.5L |
| Rated Power @ rpm | 63 hp @ 3200 rpm |
| Rated Torque @ rpm | 195 N·m @ 1400–2200 rpm |
| Compression ratio | 18.6:1 |
| Vehicle Maximum Speed | 45 mph |
| EDV N/V | 34.8 (manual) |
| Curb Mass (kg) | 1378 |
| Loaded Vehicle Mass (kg) | 1538 |
| Equivalent Inertia Mass (kg) | 1540 |
| Transmission Type / Number of Gears | Manual / 5 speed |
| Operating Fuels System | Ultra-Low Sulfur Diesel (ULSD) |
| Primary Operating Fuel Type | Ultra-Low Sulfur Diesel (ULSD) |
| Method of Air Aspiration | Turbo compounding |
| Idle Speed | 825–875 |
| Type of fuel system/Number of Carburetors | Common rail, electronically controlled |
| Combustion Cycle | Diesel |
| Cylinder Arrangement | I-4 |
| Number of Cylinders / Valves per Cylinder | 4 cylinders / 2 valves per cylinder |
| Exhaust Emission Control System | ECU, cooled variable EGR, DOC |
| Engine Type | 4 stroke turbo-diesel, common rail direct injection |
| Vehicle Maximum Payload in Lbs. Front / Rear | Front 0 lb / Rear 349 lb |
| Engine Cooling Media | Liquid |

14. Emissions-Related Labels and Hang Tag

VEHICLE EMISSION CONTROL INFORMATION LABEL 49 STATES

| Description | Specification |
|---------------|---|
| Engine Family | JMNCX2.52DM1 |
| Actual Size | 4.5 in x 2.5 in (114.3 mm x 63.5 mm) |
| Material | Metallic Poly, Destructible |
| Affix | Affix during vehicle assembly, radiator support |

Photo

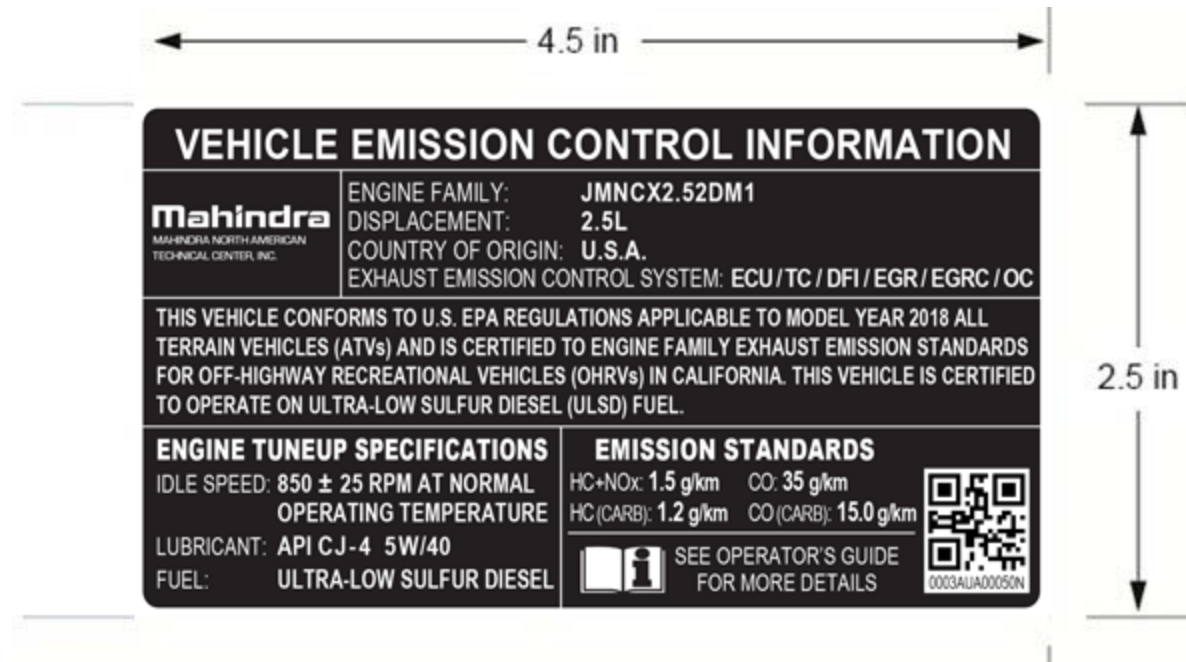


[Illustration removed for FOI version.]

VEHICLE EMISSION CONTROL INFORMATION LABEL 50 STATES


| Description | Specification |
|---------------|---|
| Engine Family | JMNCX2.52DM1 |
| Actual Size | 4.5 in x 2.5 in (114.3 mm x 63.5 mm) |
| Material | Metallic Poly, Destructible |
| Affix | Affix during vehicle assembly, radiator support |

Photo



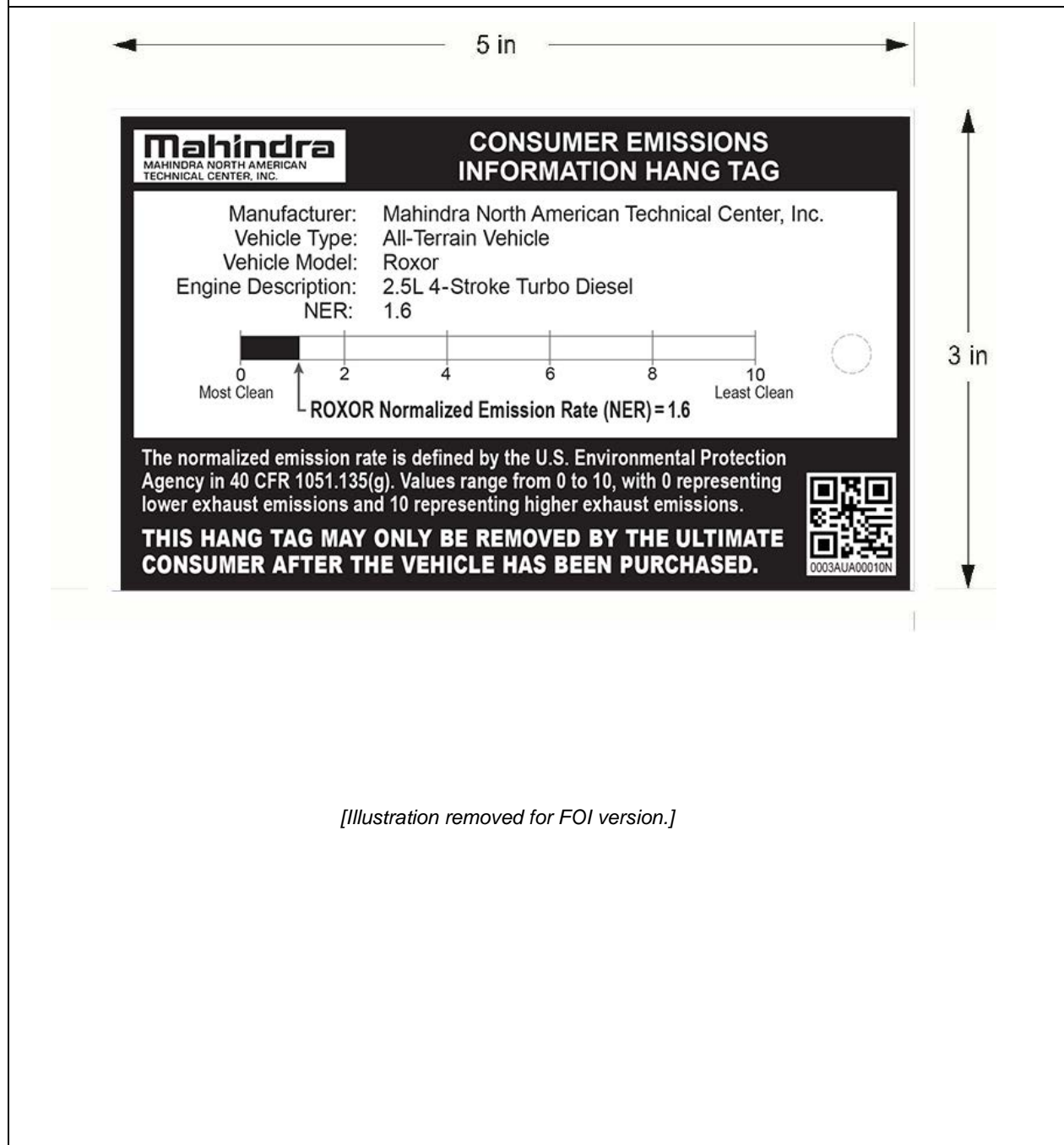
[Illustration removed for FOI version.]

OFF-ROAD USE ONLY LABEL

| Description | Specification |
|---------------|--|
| Engine Family | JMNCX2.52DM1 |
| Actual Size | 3 in x 2.31 in (76.2 mm x 58.7 mm) |
| Material | Laminated Poly, Destructible |
| Affix | Affix during vehicle assembly, dash panel |
| Photo |  <p>[Illustration removed for FOI version.]</p> |

CONSUMER EMISSIONS INFORMATION HANG TAG

| Description | Specification |
|---------------|---|
| Engine Family | JMNCX2.52DM1 |
| Actual Size | 5 in x 3 in (127 mm x 76.2 mm) |
| Material | Poly Card Stock |
| Affix | Attach during vehicle assembly to steering column |
| Photo | |



[Illustration removed for FOI version.]

15. Maintenance Schedule

2018 MAHINDRA ROXOR MAINTENANCE SCHEDULE

The vehicle owner may choose the repair shop or person to maintain, replace or repair emission-control devices and systems. Mahindra recommends the use of Mahindra emission-control devices and systems. However, Mahindra may not deny emissions limited warranty coverage based on the owner's use of other manufacturers' products in this regard.

Pre-Drive Inspection Checklist

Inspect the following items **before EVERY drive**, regardless of the maintenance interval. If an item is worn, leaking, or otherwise damaged, adjust/replace/repair the item per the **Scheduled Maintenance Chart** on the following pages. It is recommended that you contact your **Authorized Mahindra Dealer/Service** facility for service.

| Item | Recommended Maintenance Interval | | | Maintenance Procedure |
|---|--|----------|------------|---|
| | Hrs of ATV/SCAR Operation | Calendar | Miles (Km) | |
| EXTERIOR <input type="checkbox"/> Headlamps; Headlight Aim <input type="checkbox"/> Taillights and Reverse Lights <input type="checkbox"/> Tires <input type="checkbox"/> Radiator and Front Grille (no obstructions) | Inspect each item before EVERY drive , regardless of the hours of operation, time passed, or miles/km ridden. | | | Inspect each item for wear, leaks, or other damage. Adjust/replace/repair the item, as needed, per the Scheduled Maintenance Chart on the following pages. It is recommended that you contact your Authorized Mahindra Dealer/Service facility for service. |
| UNDER BODY <input type="checkbox"/> Suspension, Front/Rear <input type="checkbox"/> Brakes <input type="checkbox"/> Steering <input type="checkbox"/> Axles <input type="checkbox"/> Transmission and T-case <input type="checkbox"/> Driveshaft(s) <input type="checkbox"/> Shift Linkages <input type="checkbox"/> Exhaust System <input type="checkbox"/> Tubes, Hoses, and Wires | | | | |
| UNDER HOOD <input type="checkbox"/> Fluid levels: <input type="checkbox"/> Oil <input type="checkbox"/> Coolant <input type="checkbox"/> Brake Fluid <input type="checkbox"/> Clutch Fluid (if equipped) <input type="checkbox"/> Steering Fluid <input type="checkbox"/> Air Filter <input type="checkbox"/> Battery and Terminals <input type="checkbox"/> Belt(s) <input type="checkbox"/> Tubes, Hoses, and Wires | | | | |
| INTERIOR <input type="checkbox"/> Auxiliary/Parking Brake <input type="checkbox"/> Gauges <input type="checkbox"/> Horn <input type="checkbox"/> Ignition Switch <input type="checkbox"/> Lights <input type="checkbox"/> Pedals: <input type="checkbox"/> Brake Pedal <input type="checkbox"/> Clutch (if equipped) <input type="checkbox"/> Throttle Pedal <input type="checkbox"/> Safety Belts <input type="checkbox"/> Shifter Lever(s) <input type="checkbox"/> Steering | | | | |

Scheduled Maintenance Chart

Perform each maintenance procedure at the interval that occurs first for each item.

| Item | | Maintenance Interval (Use interval that occurs first for each item) | | | Maintenance Procedure |
|--|---------------------------------------|---|----------|-------------|---|
| | | Hrs of ATV/SCAR Operation | Calendar | Miles (Km) | |
| A = It is recommended that the maintenance procedure be performed by an Authorized Mahindra Dealer/Service facility. S = For ATVs subjected to Severe use , perform the maintenance procedure more frequently than the recommended intervals. | | | | | |
| - | Fuel Filter; Water Separator | 50 Hrs | - | 400 (640) | NORMAL USE WITH HIGH QUALITY FUEL: <ul style="list-style-type: none">▪ Drain every 50 hours. SEVERE USE OR USING POOR QUALITY FUEL: <ul style="list-style-type: none">▪ Drain DAILY.▪ Replace as needed. |
| S | Engine Oil and Filter (break-in) | 50 Hrs | 6 M | 1500 (2500) | <ul style="list-style-type: none">▪ Replace oil and oil filter. |
| S | Air Intake System; Air Cleaner/Filter | 100 Hrs | - | 3000 (5000) | <ul style="list-style-type: none">▪ Inspect for debris or oil.▪ Clean or replace, as needed. |
| - | Battery | 100 Hrs | 12 M | 3000 (5000) | <ul style="list-style-type: none">▪ Inspect terminals for corrosion or loose connectors. Clean and test. |
| - | Drive Shaft | 100 Hrs | 12 M | 3000 (5000) | <ul style="list-style-type: none">▪ Lubricate. |
| S | Engine Oil and Filter | 100 Hrs | 12 M | 3000 (5000) | <ul style="list-style-type: none">▪ Replace oil and oil filter. |
| - | Exhaust Pipe | 100 Hrs | 12 M | 3000 (5000) | <ul style="list-style-type: none">▪ Inspect for corrosion or damage. Repair as needed. |
| S | Lubrication, General | 100 Hrs | 12 M | 3000 (5000) | <ul style="list-style-type: none">▪ Lubricate all fittings, pivots, cables, etc. |
| S | Radiator and Cooling Fan(s) | 100 Hrs | 12 M | 3000 (5000) | <ul style="list-style-type: none">▪ Inspect radiator for damaged fins or debris obstructing airflow. Repair or replace, as needed.▪ Inspect fan for damage. Repair or replace, as needed.▪ Clean external surfaces.▪ Pressure test the system. |
| A | Shift Linkage | 100 Hrs | 12 M | 3000 (5000) | <ul style="list-style-type: none">▪ Lubricate.▪ Adjust as needed. |
| A | Steering | 100 Hrs | 12 M | 3000 (5000) | <ul style="list-style-type: none">▪ Lubricate.▪ Adjust or repair, as needed. |
| S | Suspension, Front/Rear | 100 Hrs | 12 M | 3000 (5000) | <ul style="list-style-type: none">▪ Lubricate. |
| S | Turbo Oil Lines | 100 Hrs | - | 3000 (5000) | <ul style="list-style-type: none">▪ Inspect for leaks or loose fittings. Repair as needed. |
| A | Wheel Bearings | 100 Hrs | 12 M | 3000 (5000) | <ul style="list-style-type: none">▪ Inspect for wear. Repair as needed. |
| - | Wiring | 100 Hrs | 12 M | 3000 (5000) | <ul style="list-style-type: none">▪ Inspect for wear, routing, or loose or worn connections. Repair or replace, as needed.▪ Apply dielectric grease to connectors subjected to water, mud, etc. |

Scheduled Maintenance Chart (continued)

Perform each maintenance procedure at the interval that occurs first for each item.

| Item | | Maintenance Interval (Use interval that occurs first for each item) | | | Maintenance Procedure |
|---|------------------------------------|---|----------|---------------|---|
| | | Hrs of ATV/SCAR Operation | Calendar | Miles (Km) | |
| A=It is recommended that the maintenance procedure be performed by an Authorized Mahindra Dealer/Service facility. S=For ATVssubjected to SEVERE USE , perform the maintenance procedure more frequently than the recommended intervals. | | | | | |
| A | Brake Fluid | 300 Hrs | 36 M | 9000 (15 000) | ▪ Replace fluid. |
| - | Fuel System | 300 Hrs | 36 M | 9000 (15 000) | ▪ Inspect lines and fittings for leaks and abrasions. Replace or repair as needed. ▪ Cycle key to pressurize fuel pump. |
| S | Gearcase Oil, Front and Rear | 300 Hrs | 36 M | 9000 (15 000) | ▪ Replace fluid. |
| S | Power Steering Fluid | 300 Hrs | 36 M | 9000 (15 000) | ▪ Replace fluid. |
| S | Transfer Case Oil | 300 Hrs | 36 M | 9000 (15 000) | ▪ Replace fluid. |
| S | Transmission Oil | 300 Hrs | 36 M | 9000 (15 000) | ▪ Replace fluid. |
| - | Spark Arrester | 300 Hrs | 36 M | 9000 (10 000) | ▪ Clean. |
| A | Suspension Bushings | 300 Hrs | 36 M | 9000 (15 000) | ▪ Inspect for wear. Replace as needed. |
| A | Accessory Belt(s) | - | 60 M | - | ▪ Inspect for wear or damage. Replace as needed. |
| S | Engine Mounts | - | 60 M | - | ▪ Inspect for wear or damage. Replace as needed. |
| S | Coolant | - | 60 M | - | ▪ Replace fluid. |
| A | Valve Timing/Clearance | - | 60 M | - | ▪ Adjust as needed. |
| A/S | Auxiliary/Parking Brake | As needed | | | ▪ Adjust or replace as needed. |
| A/S | Brake Drums and Pads | As needed | | | ▪ Inspect for excess wear. Replace as needed. |
| - | Headlight Aim | As needed | | | ▪ Adjust as needed. |
| A | Wheel Alignment; Toe Adjustment | As needed AND during routine maintenance | | | ▪ Adjust as needed AND whenever parts are replaced during routine maintenance. |

18.
**US EPA Emissions-
Related Limited Warranty**

US EPA EMISSIONS-RELATED LIMITED WARRANTY

Mahindra North American Technical Center, Inc. ("MNATC") warrants to the ultimate purchaser ("owner") and each subsequent owner that this new Vehicle's engine, including all parts of its exhaust emission control system and its evaporative emission control system, meets the following two conditions for the first Five Thousand (5,000) kilometers [Three Thousand One Hundred (3,100) miles] or thirty (30) months, whichever comes first:

1. It is designed, built, and equipped so it conforms, at the time of sale to the ultimate purchaser, with the requirements of the Clean Air Act, 42 U.S.C. §7401 et seq. (1970), as well as the Code of Federal Regulations (CFR) Title 40 (Protection of Environment), Parts 1051, 1060, and 1068.
2. It is free from defects in materials and workmanship that may keep it from meeting the requirements of the Clean Air Act, including Federal Regulations 40 CFR Parts 1051, 1060, and 1068.

When a warrantable condition exists, MNATC will repair or replace, at its sole option, any part or component with a defect in materials or workmanship that would increase the engine's emissions of any regulated pollutant within the stated warranty period at no cost to the owner, including expenses related to diagnosing and repairing or replacing emission-related parts. This warranty includes all expenses related to diagnosing and repairing or replacing any such emission-related parts, provided such work is undertaken at an authorized service facility. All defective parts replaced under this warranty become the property of MNATC.

As the manufacturer, MNATC will not deny emission-related warranty claims based on any of the following:

1. Maintenance or other service performed by MNATC or a MNATC authorized service facility.
2. Engine/equipment repair work performed by an operator to correct an unsafe emergency condition attributable to MNATC, as long as the operator tries to restore the engine/equipment to its proper configuration as soon as possible.
3. Any action or inaction by the operator unrelated to the warranty claim.

4. Maintenance performed more frequently than MNATC specifies.
5. Anything that is the fault or responsibility of MNATC.
6. The use of any diesel fuel that is commonly available where the vehicle operates. Please review the fuel instructions in the Operator's Guide warning that the use of any fuel other than Ultra Low Sulfur Diesel (ULSD) fuel may harm the vehicle's emission control systems.

Components Covered under this Warranty

This warranty covers all emission-related components whose failure would increase the Vehicle's engine's emissions of any regulated pollutant, including the components listed below.

1. For exhaust emissions, any engine parts related to the following systems:
 - Air induction system
 - Fuel injection system
 - Exhaust gas recirculation systems
2. For exhaust emissions, the following emission-related components:
 - After-treatment devices
 - Closed crankcase ventilation
 - Sensors
 - Electronic control units
 - Diesel oxidation catalyst
3. Emission-related components also include any other part whose only purpose is to reduce emissions or whose failure will increase emissions without significantly degrading engine/equipment performance.

Limited Applicability

As the manufacturer, MNATC may deny emission-related warranty claims for failures that have been caused by the owner's or operator's improper maintenance or use, by accidents for which the manufacturer has no responsibility, or by acts of God. For example, an emission-related warranty claim need not be honored for failures directly caused by the operator's abuse of the engine/equipment or the operator's use of the engine/equipment in a manner for which it was not designed and is not attributable to the manufacturer in any way.

19.
California
Emissions Control
System Warranty
Statement

CALIFORNIA EMISSIONS CONTROL SYSTEM WARRANTY STATEMENT

WARRANTY RIGHTS AND OBLIGATIONS

Mahindra Vehicle Sales and Service, Inc. ("Mahindra"), a Delaware corporation, warrants that its new 2018 Side by Side ROXOR ("Vehicle") is designed, built and equipped to meet California's stringent anti-smog standards, administered by the California Air Resources Board. Mahindra warrants that the Vehicle's evaporative emissions control system complies with these standards for the first Five Thousand (5,000) kilometers (Three Thousand One Hundred (3,100) Miles) or thirty (30) months, whichever comes first provided that there has been no abuse, neglect, unapproved modification or improper maintenance of your Vehicle. When a warrantable condition exists, Mahindra will repair or replace the defective part(s) at no cost, including diagnosis, parts and labor.

The Vehicle's evaporative emissions control system may include parts such as the carburetor or fuel-injection system, fuel tank, fuel hoses, carbon canister, and engine computer. Also included may be hoses, belts, connectors and other evaporative-related assemblies.

VEHICLE PARTS COVERED UNDER WARRANTY

Parts covered:

- Canister Mounting Bracket(s)
- Carbon Canister
- Purge Port Connector
- Clamp(s)*
- Electronic Control*
- Fuel Cap
- Filler Neck
- Filler Neck Hose
- Fuel Line(s)
- Fuel Line Fitting(s)
- Fuel Tank
- Pressure Relief Valve(s)*
- Purge Valve(s)
- Check Valve(s)*
- Vapor Hose(s)
- Flow Reducer
- Filter(s)*
- All other parts not listed that may affect the evaporative emissions control system.

*As related to the evaporative emission control system


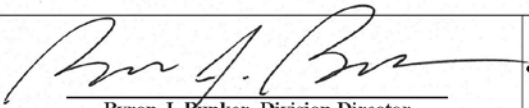
OWNER'S WARRANTY RESPONSIBILITIES

The Vehicle's owner is responsible for the performance of the required maintenance listed in the Operator's Guide. Mahindra recommends that the owner retain all receipts covering maintenance on the Vehicle, but Mahindra cannot deny warranty solely for the lack of receipts or for failure to ensure the performance of recommended scheduled maintenance.

The owner is responsible for presenting the Vehicle to a Mahindra Dealer as soon as a problem exists. The warranty repairs should be completed in a reasonable time, not to exceed thirty (30) days.

The Vehicle owner should be aware that Mahindra may deny warranty coverage if the Vehicle or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications. Any questions regarding these warranty rights and responsibilities should be directed to Mahindra Customer Care at (844) 423-7677 (online at www.mahindranatc.com/customer-care). Or contact the California Air Resources Board at 9528 Telstar Avenue, El Monte, CA 91731.

26. EPA Certificate of Conformity

| | | |
|--|---|---|
|  | UNITED STATES ENVIRONMENTAL PROTECTION AGENCY 2018 MODEL YEAR CERTIFICATE OF CONFORMITY WITH THE CLEAN AIR ACT | OFFICE OF TRANSPORTATION AND AIR QUALITY ANN ARBOR, MICHIGAN 48105 |
| Certificate Issued To: Mahindra North American Technical Center, Inc. (U.S. Manufacturer or Importer) Certificate Number: JMNCX2.52DM1-001-R01 | Effective Date: <u>10/20/2017</u> Expiration Date: <u>12/31/2018</u> |  _____ Byron J. Bunker, Division Director Compliance Division |
| Issue Date: <u>10/20/2017</u> Revision Date: <u>12/05/2017</u> | | |

| | |
|---|---|
| Engine Family Name: JMNCX2.52DM1 Permeation Family Name(s): JMNCPMETALA0 Evaporative Family Name: N/A Exhaust Emission Test Procedure: 40CFR86, Subpart E: Chassis test Exhaust Emission Standards: HC: N/A CO: 35 g/km HC+NOx: 1.5 g/km Permeation Emission Standards (grams/m²/day): Fuel Tank: 1.5 Fuel Hose: 15.0 | Vehicle/Engine Category: ATVB-Meeting EPA ATV Definition Fuel Type(s): Diesel Engine Type: 4-Stroke, 4-cylinders, Liquid Cooled Engine Displacement(s) Covered (in cubic centimeters): 2523 Key Emission-Related Components: 1-Catalyst(s), EGR Full Useful Life: EPA Required Minimum Sales Area(s): 50 States Models Covered: ROXOR |
|---|---|

Pursuant to §213 of the Clean Air Act (42 U.S.C. §7547) and 40 CFR Parts 1051, 1065 and 1068, this Certificate is hereby issued with respect to test vehicles or engines which have been found to conform to the requirements of the regulations on control of air pollution from new recreational vehicles and new recreational vehicle engines (40 CFR Parts 1051, 1065 and 1068) and which represent the vehicle models listed above by engine family and permeation/evaporative families, more fully described in the application of the above named manufacturer/importer. Vehicles or engines covered by this Certificate have demonstrated compliance with the applicable emission standards, as more fully described in the manufacturer/importer's application. This Certificate covers the above models, which are designed to meet the applicable emission standards specified in 40 CFR Parts 1051.

EPA is issuing this Certificate subject to the conditions and provisions of 40 CFR Part 1051, Subpart D and G.

This Certificate covers only those vehicles which conform, in all material respects, to the design specifications that applied to those vehicles described in the documentation required by 40 CFR Parts 1051, 1065 and 1068 and are produced during the 2018 model year production period as defined in 40 CFR Parts 1051, 1065 and 1068. The manufacturer/importer shall obtain the approval of the California Air Resources Board (in the form of an Executive Order issued by the California Air Resources Board) prior to introducing any vehicle covered by this Certificate into commerce (1) in the State of California, or (2) in a State that, under the authority of §209(e) of the Clean Air Act, has adopted and placed into effect the California standards to which this engine family has been certified. This Certificate does not cover vehicles sold, offered for sale, introduced, or delivered for introduction into commerce in the U.S. prior to the effective date of the Certificate.

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